GREEN AFRICA NETWORK (GAN)

PROJECT REPORT

on

ETHNOMEDICINE AND MEDICINAL PLANT CONSERVATION IN RACHUONYO DISTRICT (PILOT STUDY)

presented to

INTERNATIONAL DEVELOPMENT RESEARCH CENTER (IDRC)

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OUTLINE

This report highlights the findings of the pilot study 'Ethnomedicine and medicinal plants conservation in Rachuonyo District' carried out by GREEN AFRICA Network with support from IDRC. It is divided into four major parts. Part one is a sneak preview of the field research carried out by GAN in its entirety and incorporates the background, summary and introduction.

Part two outlines, in considerable detail, the purpose of the study and describes its area, size, population people and healthcare status.

Part three discusses the utilization of herbal medicines for healthcare in Rachuonyo district and observes the need for the conservation of ethnomedicinals. This also forms one of the recommendations of a workshop whose highlights are contained in part four.

In the fourth part of this report is the workshop report detailing the proceedings.This is followed by the appendices namely; the workshop agenda, the list of participants and a tabulation of medicinal plants species collected during the field survey and their medicinal uses as prescribed by the herbalist respondents.

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Abbreviations in text

GAN: GREEN AFRICA Network
IDRC: International Research Development Coperation
TM: Traditional Medicine
TMP: Traditional Medicine Practitioner
TMPs: Traditional Medicine Practitioners

ACKNOWLEDGEMENTS

We would like to extend our gratitude first and foremost to IDRC for sponsoring this pilot phase of the project and to the local community who responded very positively to our invitation to develop this project and participated in the pilot field survey. Our gratitude also go to the government administrative personnel in Rachuonyo District, particularly Senior Chief Cornel K'Aol, who were very instrumental in mobilising the community and who have shown great wisdom in steering the community towards the right direction in development. Last but not least, we wish to thank the respondents who were interviewed during the two field sessions (asterisked names in Appendix II).

1 BACKGROUND

This pilot study was carried out by GREEN AFRICA Network's Biodiversity and Conservation programme whose main activities are centred on the sustainable exploitation and utilisation of flora and fauna.

1.1 SUMMARY

This report describes the findings of a pilot study carried out by GREEN AFRICA Network in Rachuonyo District in the year 1998/99 to document ethnomedicinals used by Rachuonyo community for their healthcare. Eight traditional Healers and fourteen household representatives were interviewed to determine the medicinal plants that they use for preparing traditional herbal remedies. The plants that were readily available were photographed and reference samples collected for storage at the Nairobi University Botany Department herbarium. A total of seventy plant species were cited by the interviewees to be of medicinal importance (Appendix III). As part of the efforts to conserve medicinal plant that seem threatened by over-harvesting, GAN has initiated a medicinal plants garden where a number of seedlings have already been planted.

At the end of the fieldwork, a workshop was held with participants comprising of traditional medicine practitioners drawn from the local community, local government officials and opinion leaders as well as GAN scientific staff and researchers from other institutions in Kenya. The workshop was intended to sensitise the community on the need to preserve their indigenous knowledge relating to traditional medicine practices and the need to conserve the medicinal plant materials used in such practices. The workshop also provided a forum for the custodians of indigenous knowledge to express their views and communicate to us their most pressing needs in this area. It also presented an opportunity for GAN and the community to chart out the priority areas requiring immediate action.

1.2 INTRODUCTION

In the beginning, all drugs were natural-animal, vegetable, and mineral. Ancient people not only discovered that cinchona bark cured intermittent fevers, but that also found out that chewing coca leaves numbed the tongue and reduced the appetite, that feeding ergotized grain to pregnant animals caused those animals to abort, that chewing tea leaves or drinking an aqueous preparation made from the same kept one awake, and that swallowing the latex from unripe capsules of the opium poppy allayed pain. These examples could go on and on because early people were intensely curious, and millions of trials complemented by frequent serendipity revealed that many plants were useful in treating diseases.

Today, World Health Organisation (WHO) estimates indicate that up to 80% of the world population, mostly in the developing countries, rely on traditional medicine practices for their healthcare needs. In Kenya, a sizeable section of the population still rely solely on traditional medicines for cure of various ailments. This situation is strengthened by the rising costs in Kenya's formal healthcare system which has rendered a majority of the population incapable of meeting these costs. Indeed, in the rural areas most people visit the hospitals and veterinarians only when remedies from their local traditional physicians fail. Most medicines dispensed by such traditional healers are prepared primarily from plant and animal parts and are currently in great demand.

Unfortunately the negative attitudes which developed towards Traditional Medicine (TM) practice in the recent past have led to fewer individuals entering the profession and consequently, most of the indigenous knowledge on useful medicinal plants and animals which took years to gather is gradually being lost. This is exacerbated by the reality that that few formal studies and research activities have been undertaken to safeguard both the indigenous knowledge and the medicinals involved. In addition it is now apparent that the way medicinal plant plants are harvested and regenerated will greatly determine their availability in the future.

A search through the East African Herbarium (EAH) specimens indicate that not much plant collection has been done in Nyanza Province and the only document on the Ethnobotany of this area, is a paper presented at a workshop which was held in Baringo in November, 1992[1] and some entries in the book, "Medicinal plants of East Africa" [2]

Although the area is not endowed with vast areas of natural forests, there exists several pockets of natural forests and vegetation cover, some of which include the Gwasi hills, Gembe hills, Mirogi, Lambwe valley, and Kachieng. Islands of game

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[1] Sindiga, I., Nyaigoti-Chacha, Kanunah, M. P. (eds.) Traditional Medicine in Africa, (Nairobi: East African Educational Publishers, 1995).

[2] Kokwaro, J.O. Medicinal Plants of East Africa (Nairobi: Kenya Literature Bureau,1993).

reserve are found in this area; Ruma National Park, the largest of these is about 12,000 ha. There being no major biosphere reserves, much of the residual vegetation found in the different ecosystems in trust land areas or private fields are the only remaining depositories of valuable plant genetic resources that the province can count on. No systematic ethnomedical surveys have been carried out in any of these areas.

The local populace in these districts depend on these forest areas for the supply of all forest resources such as medicinal herbs and fuel wood. Due to cultural disposition and the fact that the area lacks a well developed healthcare infrastructure, the populace is heavily dependent on traditional healthcare system which in turn relies on these small forests for supplies of herbal medicines.

Forests in Kenya are unfortunately being depleted at an alarming rate. A recent survey indicate that 36,000 hectares (ha) of indigenous forests are lost from Kenya annually[3] In the Nyanza Province, 30% of the forests have been cleared due to demand for forest products and to give way for settlements as well as agricultural activities in the last 10 years.

2 0 PURPOSE OF THE RESEACH

The goal of this project is to assist the communities in Southern Nyanza Districts in Kenya to make the best possible use of their knowledge and practices relating to traditional medicine and the local medicinal plants. Thus the project aims to conserve the knowledge and materials relating ethnomedicine practices in the community. Among the strategies adopted to achieve this is to help develop an understanding between the stake holders (Traditional Medicine Practitioners,[TMPs] scientists, medical doctors) and through the conservation of medicinal plants. In addition by removing negative attitudes and stereotypes we hope to inculcate positive attitudes and values for these resources and consequently create an interest to ensure their survival for the future generations.

This document reports on the findings of a pilot study done in 1998-99. The study was undertaken first to document the knowledge on ethnomedicinals in Rachuonyo District as used by the herbalists and households and to re-evaluate the useful aspects of some of the local traditional therapies by carrying out a literature survey to determine their usage in other parts of Kenya and the world. Secondly, a workshop was held to sensitise the local community on the need to conserve both the knowledge and materials used on ethnomedicine practices. As contribution to the conservation of medicinal plant resources, the development of a medicinal plants garden was initiated. This garden is intended to act as a demonstration plot for the community on methods of propagating medicinal plants. Later, seedlings of medicinal plants will be raised and provided to the community at a subsidised price.

2.1 STUDY AREA

Rachuonyo District, the study area occupies an area of 929 sq. Km with a population density of about 400 people per sq. Km. The area is inhabited by the Luo speaking

[3] Op cit.

people who by virtue of their cultural disposition and because of lack of adequate medical infrastructure, rely mostly on traditional medicines for their healthcare needs. In this pilot phase of the project, the interviewees were selected from within three sub-locations namely, Kachieng, Kawere and Konyango. Selection was done based on information obtained from the government senior administrators who we believe know best the people who actually practice traditional medicine. The interviewees were visited in advance to familiarise them with the study objectives and to seek their consent in being involved in the study. They were then briefed on what is expected. Thus 22 people were interviewed during this period. A team comprising of the principle investigator, a taxonomist, social scientist and a community representative visited the inteviewees homes where the inteviews took place. After about 4 hours (whole morning) on discussion (where by several interview questionnaires were filled indicating the diseases treated and the plants used for treatment) the team was led to the field, forest, garden or wherever the plant materials are usually collected by the healer. The taxonomist helped to identify the plant while in the field and three samples of the plant were collected and carried back to the station. These were later prepared as herbarium specimens and taken to the University of Nairobi, Botany Department herbarium where they were processed and stored.

3.0 UTILISATION OF BOTANICALS AS MEDICINALS IN RACHUONYO DISTRICT

Modern pharmaceuticals are available in South Nyanza as in other parts of the country. However the pilot study reveals that a majority of the inhabitants of this community continue to depend, at least in part on herbal remedies. It is evident that herbal medicine is not only practised by the well known Traditional Medicine practitioners who do this as a trade and means of earning their living but it is also a common feature in most homes. In actual fact, all homesteads visited, had at least one person well versed with some of the herbal medicines and are able to provide the initial treatment when a family member falls ill. Most often than not the person is consulted before a patient is taken to the well known practising herbalist. A majority of the community members knowledgeable in herbal medicine were women. In fact one respectable opinion leader in the community commented during an interview that- and I quote

> "you people should concentrate on the women..., they are the ones who usually know these medicines for treating the family, us men only know very special ones".

Although traditional herbal medicine is widely practised in this area, western medicine is more popular for certain ailments. For example malaria, a serious health problem in this area, is treated mainly with western medicines such as, Fansidar, Camoquin, Chloroquine and other generics, most of which are available over the counter and often self prescribed. Out of the ninety medicinal plants only 12 species (13%) are cited to be used for the treatment of malaria.

Interview session: the project team interviewing a traditional healer (carryig the sieve) at his clinic in his home. The traditional healer has a set up for distilling a concotion made up of upto 20 plants. The distillate is used for a wide range of ailments.

3.1 THE CONSERVATION MEDICINAL PLANTS

In a pilot study such as this it is not possible to generate adequate data regarding the conservation status of any particular species, given that this status would be determined not only by the particular use in the area but also by other external demands. However, it is clear that the traditional healers and other community members using these resources understand best their regeneration cycles and level of scarcity and availability. Given their close association with these resources they would be better able to monitor them and they should be the first to notice diminishing levels and perhaps attempt to remedy the situation.

We found that a number of TMPs had planted some of the herbs that they use in their gardens. Many however preferred to collect from the wild beleiving that plants from the forest were more potent medicinally. A few TMPs indicated that they considered efforts to plant medicinal plants as a means of conserving them unneccesary at this time since they were always able to find them in the forests whenever they needed them.

We also learnt that there are certain taboos surrounding some of the medicinal plants which would need to be taken into account in designing conservation strategies to be undertaken. For example a plant like "Orembe" *Erythrina abyssinica* according to the Luo customs, should not be planted in the home as it is believed to bring bad luck and could cause the home to be struck by lightning. A certain species of *Euphorbia* "bondo" is believed to cause death in the family and therefore should not be planted within the homestead. There are also other species thet the Luo believe should not to

be handled by the women, especially during the menstruation, as this would render the plants inactive medicinally.

Although most of these claims may not be scientifically justifiable, it is important that such issues be taken into account when designing conservation strategies in this region. For example, in this community the believe that certain plants should not be handled by women, may have been meant to discourage the women from learning about some important medicinal plants. However, because of this belief, it might be futile to have a lady as the gardener because she would handle some of the plants that the community does not expect women to handle and consequently TMPs might decline to purchase such seedlings.

Evidently the TMPs also need to be taught about sustainable methods of harvesting medicinal plants. Previously it has been suggested by other researchers that harvesting of medicinal woody plants should be restricted to the bark of the branches. However, unless it can be established that the variation in chemical composition between the main stem and the branches is not significant this is unlikely to work. Other more sustainable methods might be to encourage the herbalists and collectors to remove a few pieces of bark from a number of plants instead of removing large quantities of plants from a few trees. Despite the numerous suggestion already put forth, the most effective way to effect sustainable harvesting of these medicinal resources would be to help the users to understand the need for sustainable utilisation of these resources.

During these field surveys, information was collected on the abundance of each medicinal plant in the locality and to determine the availability of the plant. This information enabled us to select medicinal plants that we felt were most popularly used and as a result were being over harvested to meet the demand. Such plants were reported to be in short supply and the herbalists said they had to travel long distances to forest areas e.g. Kodera forest or Got Ramogi or even to other Provinces in Kenya or across the border into Tanzania or Uganda to collect.

Appendix I gives a list of plants that were cited by the healers. The most popularly used plants that are now rarely found in the area are indicated with an asterix while two asterix indicate plants popularly used but have to be obtained from other parts of Kenya.

In the last column in the Table, other reported uses in published texts are indicated. There was a good correlation with reported uses in other parts of Kenya. However, we recorded 20% new traditional uses of these plants. Although this was just a pilot survey it clearly points to the need to continue the systematic documentation of ethnomedicines. More importantly, since only a few respondents were interviewed, it is imperative that this information should be corroborated through independent additional interviews. At the end of the pilot study a workshop was convened at the Amani Christian Community Development Center to discuss the reults of the pilot study and to brainstorm on ways to improve the project particularly by learning from the community what they considered as priority in the area of traditional medicine and medicinal flora and fauna. The following section details the findings of thiss workshop.

3.2 TRADITIONAL MEDICINE AND MEDICINAL PLANTS WORKSHOP-HIGHLIGHTS

The workshop brought together 68 community representatives including traditional healers and government officials. In particular we were honored to have the area Senior Chief and the councilor attending the whole session. The natural and social scientists in attendance were part of the organizing team.

The main issues addressed at the workshop were: Protection and conservation of medicinal plants and traditional knowledge relating to their uses, Co-operation between the western trained medical doctors and the traditional medical doctors, bio-prospecting, and the distribution of benefits from traditional medicines as well as medicinal plant conservation.

The issue of mistrust between researchers/doctors and traditional healers featured very strongly. The TMPs cited a case where employees of a certain well known international organization visited the community with a similar idea as GAN was prosposing but after the initial discussions disappeared with the information and have never been seen again. The only assurance GAN could give the community was that GAN is a local organisation formed by members of the community and thus would really have nowhere to run to should the project executants attempt.

Regarding the issue of improving traditional medicine practise, there was a strong consensus that the traditional practitioners need to improve hygenic standards in their practices and there seem to be a general notion and belief that collaborating with western trained medical doctors could help in this regard.

Many TMPs were positive about the need for the conservation of medicinal plants and indicated that they would be willing to participate in developing medicinal plants gardens. A number of them expressed that they had always longed to plant some of the medicinal plants like "mwarubaine" but could not get seedlings. One participant brought up the issue of certain taboos regarding the planting of trees in the Luo community which he felt were a major deterrent to those who might wish to participate in this excercise. For example, he suggested that the belief that women should not plant trees must be done away with to enable the women to participate actively as they also use these plants.

The TMPs present felt that they needed to form an association so that they can regulate their practice. They cited cases of herbalists who use "expired" preparations that have stayed for long. Such herbalists prepare and keep medicines for months and this could be dangerous to patients. Such herbalists could be disciplined by being members of such an association as they would set certain standard to be adhered to in the practice.

Although the TMPs in this community are enthusiastic about being registered as practitioners and feel that this would be a solution to most of their problems, it must be mentioned that the issue of TMPs registration remains a cloudy one all over Kenya. It is a fact that after gaining independence in 1963, Kenya began moving her health policy towards post-colonial directions first by incorporating Traditional medicine in the National health policy framework in the late 1970's (in the 1979-1983 Development Plan). Kenya's 1989-1993 Development Plan recognized traditional medicine and put forth a commitment to the promotion of the welfare of traditional medical practitioners. However, despite the existence of these post-colonial policy innovations, there are no

legal arrangements to implement them and thus legal abstention has continued to be the primary strategic drawback in Kenya's failed implementation of an otherwise brilliant policy innovations.

A detailed analysis recently carried out by Okoth Owiro[4] on law and traditional medicine in Kenya points out the general confusion surrounding traditional medical practitioner registration in Kenya. He states that although the Ministry of Health and the provincial administration require the registration of traditional medical practitioners: is not clear under which particular law the registration requirement is invoked. The purpose of registration is also not stated, as it is known that non-registration is not a disability of any kind. What is even more curious is the fact that, apparently there is no criterion of qualification for registration in policy or law. It appears that a TMP is entitled to be registered on the basis of a membership in a society of practitioners. At the same time, a practitioner is entitled to join such a society on the basis of registration.

Presently, the Ministry of Culture and Social Services is responsible for overseeing the TMPs practices as well as their general welfare. However, up to date there exists no nation-wide association of TMPs in Kenya. There are quite a number of small associations, many of which are unregistered and therefore unknown to the ministry.

[4] Okoth-Owiro, A. *Law and Traditional Medicine in Kenya* in Islam, A. and Wiltshire, R. (eds.), Traditional Health Systems and Public Health Policy, (Ottawa: International Development Research Centre, 1994.)

3.2.1 PROJECT WORKSHOP REPORT

Introduction

The workshop took place at the AMANI Christian community Development Center, five Km from Oyugis town and brought together 68 community representatives including traditional healers and government officials. In particular we were honored to have the area chief and the councilor attending the whole session. We also had natural and social scientists attending as part of the organizing team.

The workshop was opened with a word of prayer from one of the participants. Dr. Hellen Oketch the Programme Director of GAN welcomed the workshop participants. She gave a brief on GAN the organizers of the workshop. The Senior Chief Cornel K'Aol also welcomed the participants to his area of jurisdiction setting them free to participate fully in the workshop and declared the meeting opened. Participants were then given an opportunity to introduce themselves each indicating the disease they can treat best.

Mr. Oyucho, the Master of Ceremony, and the GREEN AFRICA network field manager then gave the opening speech. Speaking as a member of the community, he underscored the importance of traditional medicine practice as a complimentary method of healthcare provision more affordable to community than conventional medicine. Drawing on his experiences as a child growing up in the area, he cited cases where he believed his life was saved by herbalists. Mr Oyucho thanked the participants for coming to the workshop and stressed that it would be a great benefit to them to increase their knowledge and understanding of the subject especially in relation to the general trend in the world today.

He re-assured the community members present that TM practice was of great value to the community and that it is only the people who do not understand life in the community and who are therefore ignorant of the true value of TMP in the community that could despise them. He went further to recall that many other medicine in the market today e.g. chloroquine originated from plants that were used traditionally for treatment in other communities elsewhere in the world. The truth is that the herbal medicines, prepared in the community as drugs, are cheaper and are known to have saved many lives. In addition it is known that some disease e.g. "chira" cannot be treated in hospitals but are well managed by TMPs.

Mr Oyucho emphasized the need to conserve forests as they are the source of medicinal plants used by the TMPs who themselves should play a leading role in the conservation as the major stake holders. He acknowledged that a misunderstanding do exists between TMPs and western trained medical doctors but attributed this to be mainly due to a communication barriers and mistrust. He intimated that GAN had an interest to put the Luo community on the world map for their ethnomedicine practices and were making arrangements to introduce exchange visits between TMPs in Rachuonyo and in the neighboring countries, like Uganda and Tanzania, so that they could learn form each others experiences. He informed the participants that this was just the beginning of better things to come and urged everyone to unite and openly participate in developing and implementing the program. Recalling that Rome, the greatest city in the world, was not built in a day he asked for patience on the part of everyone as they work to improve and develop traditional medicine practice in the

community.

3.2.2 WORKSHOP OBJECTIVES AND METHODOLOGY

The first day of the workshop was spent visiting the new medicinal plants garden site and provided an opportunity for discussion and sharing of ideas during an informal plenary session. On the second day the participants were divided into 2 groups to review the major areas as outlined in the objectives of the workshop which are modified after the first day's plenary discussions. Each group then outlined recommendations on how they would like the issues to be handled.

The objectives were to:

- Provide a forum in which to address the barriers and mistrust among traditional healers themselves and between traditional healers and the conventional health providers.
- Find out the community's opinion on what researchers, scientists and doctors can contribute to improve traditional medicine practice.
- Sensitive the community about conserve of medicinal fauna and floral resources.
- Determine the acceptability of proven medicinal plants especially those used for treating common ailments.

The workshop was thus intended to address various issues regarding traditional medicine practice that are presently pressing to the community and to provide an opportunity for community and GAN to openly discuss the ethnomedicine project and to reach a consensus on the most pressing area that need immediate attention.

Dr Hellen Oketch presented a general paper on "Traditional Medicine and Medicinal Plants: Current trend in the world". She first gave a background on the GAN pointing out the organization's mission and objectives which mainly revolves around translating research findings into tangible benefits for the community. She explained the objectives of the project under which the work shop was being held and pointed out that the workshop was intended as a forum to discuss the project and agree upon the priority area that need immediate action.

She said that together with her other researcher colleagues who have worked in this discipline for a long time, they have encountered some problems in the communities which they believed could be solved by the researcher working together with the community. One of the most common situation they have had to deal with is that of mistrust between TMPs, medical doctors and researchers which has made it difficult to progress in this area. She underscored the need to document our traditional medicine practices not only because it is the trend the world over but also because it is the most sure way of preserving the information.

Regarding the fear that once released the information could be used by other to practice, Dr. Oketch emphasized that the GAN group is not interested in practicing traditional medicine and furthermore, other TM practices like the Asian traditional medicine (Ayurveda, Unani etc) has benefited from documentation and have even become more popular worldwide despite the many books already written about them. She assured the community that GAN would ensure that they benefit should a product

ensue from the work that GAN proposed to do in the area. However, it was necessary in her opinion to get organized so as to develop collective bargaining power.

She then left them with a number of thought-provoking issues thus

- How can we together help develop a better understanding between the traditional healers, medical doctors and researchers to allay the mistrust that presently exists?
- In this era of diminishing resources where forests that are the source of medicinal plants are being destroyed, how can we ensure the survival of medicinal plants for ourselves and the future generations?
- How can we make the Luo TM practices more acceptable in the community and among other communities in Kenya and even in the world?.
- Is there any benefit (other than healthcare provision) that they foresee could come from traditional medicine practice?

Subsequently the discussion was open to the participants to make contributions on what they envisaged for this project. As a result two new areas of concern were identified and using the questions earlier posed by Dr Oketch as a guide, four main points were crystallized for group discussion thus:

- How should the mistrust between traditional medicine practitioners and the conventional doctors, be handled?
- Do the herbal medicines work?.
- What can researchers and doctors do to help the traditional medicine practitioners improve their practices?.
- What can be done to conserve medicinal plants?

Concern from the healers

During the plenary session TMPs expressed concern that they had been in other workshop where they were promised a lot but nothing was eventually delivered. They hoped that this would not happen with GAN. They requested GAN as an indigenous organization to help them form an association that could look into the problems experience by TMPs and also help regulate the practice. The also called for honesty within the traditional doctors saying that some treat with evil motives (are witch doctors) and should stop such practices that make people lose trust in the practice.

A section of workshop plenary session

Participant explaining a point at the working group session

3.2.3 SALIENT FEATURES FROM THE GROUP DISCUSSIONS

After the plenary discussion the participants were divided into two groups. The first group was given the task of discussing the first two points while the second was given the task of discussing the last two points.

Each group was to come up with recommendations on how each issue should be handled to improve traditional medicine practice in the community and even initiate activities which could benefit the TMPs and the communities in the long run.

GROUP 1:

Issues discussed

- What can researchers and doctors do to help the traditional medicine practitioners improve their practices?.
- What can be done to conserve medicinal

3.2.4 WORKSHOP RECOMMENDATIONS

How Scientists and Doctors Can Make TM Practice a Success

In general the participants felt that there should be close collaboration between the three groups of people so that there can be exchange of information to help improve traditional medicine practice. The following are the points that were presented to the plenary session as summary of their discussions.

- Western trained medical doctors should recognize the traditional doctors and work with them hand in hand so that there can be a referral system where patients can be referred both ways.
- The drugs used by traditional healers should be investigated and once found efficacious, the healers should be allowed to also treat in the hospitals.
- The traditional healers should be assisted to construct and assisited to procure equipment that can enable them prepare their drugs in an hygenic way.
- The traditional healers should be licenced to practice and not be considered as criminals. Instead they should be assisted to build a hospital where they can also

practice.

- There should be constant exchange of information between the scientists, doctors and traditional doctors in order keep each informed of new developments.
- Scientists should train the traditional doctors on how to prepare their drugs in hygienic way and they should also be trained on better acceptable methods of administering their drugs.
- A system should be deviced to reward a traditional healer who develops or has an effective drug for a given ailment for example such a person could be given an award or a letter of recommendation.

On the Conservation of Medicinal Plants:

A majority of the participants agreed that there was indeed a need to start conserving medicinal plants as most of the forests that are the source of medicinal plants are being cut down. A few did see a need for this.

Below are suggestions they put forth in order to help in the conserving medicinal plants:

- Green Africa Network should help the healers purchase land where they can plant medicinal plants and look after them. In addition those who have big farms should inter crop some herbs within their farms.
- There should be an understanding between the traditional healers themselves so that those living near the rivers and forest areas should keep watch on the plants there.
- Traditional healers should form an association and purchase pieces of land located in areas rich in medicinal flora. The government should also pass laws to protect such areas from being taken by individuals and destroyed.
- TM practitioners who use the tree barks should not destroy the plants by cutting the tree trunks but take only a small amount of bark so that others and even they can later be able to get some.
- They also saw it necessary that women should be allowed to plant trees saying that the Luo custom that stated otherwise makes it difficult for the women to participate in the conservation of medicinal plants.

They however cautioned that some medicinal herbs and trees cannot be planted according to the Luo traditions forbid. In addition, they indicated that some are adopted to specific habitats for example hydrophytes and therefore cannot be planted.

Preparing the garden site

Planting *Prunus africana* seedling

GROUP 2:

Points discussed

- How should the mistrust between traditional medicine practitioners and the conventional doctors, be handled?
- Do the herbal medicines work?.
- General Sentiments:

The members of Group II felt that Luo traditional medicines practice is just like western medicine in that the patient has to be examined before being treated and the medicines administered. They however, confessed that indeed there are TM practitioners who do not follow the expected procedure in practicing but instead take the practice for granted. Such practitioners do so because their grand -parents were doctors themselves and having inherited the same. The traditional medicine practitioners all agreed that, there are disadvantages with their traditional medicine citing reasons such as:

- Doctors using already expired medicine, having prepered them in bulk weeks earlier.
- They have no proper measurements for their drugs thus may not always give the correct quantities.
- Drugs are not made in a hygenic way.
- Traditional doctors do not keep records of the people they treat.
- Some are not honest in their practices.
- One drug is used for many different ailments.
- Despite what they pointed out as negative points of the practice, they maintained that Luo traditional medicine are effective. The participants then recalled cases where their medicine have worked like malaria and gynaecological problems. They indicated that the Luo traditional medicine has suffered mainly and greatly because of Luos' adoption of western ways and their quick abandonment of traditional medicine practices . Some old participants recalled that long before

people never used to go to hospitals but were fully dependent on TM and this goes along way to demonstrate the efficacy of traditional medicine .

- A major drawback in improving the practice was cited, the lack of machines to make the drugs more palatable and to stay longer. They believed this to be the major reason for their poor marketability. The participants felt that the elites in the community have failed them by blindly turning to and trusting western medicines "drugs from the chemists" and completely abandoning their own. Such behaviour they believe, have contributed a lot to the way in which traditional medicine as insignificant. They also blamed the western concept of religion which they accuse of inculcating the feelings among the faithful that traditional medicine is sinful, thus forcing them to dissociate from the practice and denounce it.
- It also emerged that western-trained medical doctors were also viewed as victims of circumstances such that even when they were aware of medical cases best treated by traditional medical practitioners , they could not refer their patients to TMPs for fear of loosing clients if people got to know that they had some faith in TM practice.
- Another major issue that came up is that of terminology used to refer to TMPs The participants felt that terms like *ajuoga.* were derogatory and should not be used as they made people think of TMPs as witches.

The members of group II had some requests to make to GAN

They recommended that GAN should arrange training seminars and workshops to help them improve their practice e.g. to learn to make /prepare the drugs in an hygenic manner and administer them properly

They requested GAN to help them get organised into a group and for GAN to create and maintain a directory of all TMPs in the region indicating their areas of specialisation for easy consultation and referrals

The participants also requested that GAN should help them to find other markets for their herbal products

In conclusion, they all thanked GAN saying it has done a good job and that it should continue together for the benefit of the community.

General recommendations

Luos should cultivate more interest in their traditional medicine practice to help improve the practice as they are better placed placed to understand the practice.

GAN and other researchers should help them acquire machines that can prepare their drugs in powder form.

Communication should be established between the traditional doctors and the medical doctors probably via GAN and the government machinery.

GAN should them machines for checking patients before treatment.

Luos should change their mentality that they can only be treated in hospitals and accept that in some cases traditional medicine works better.

GAN should make a directory containing the names of all TMPs and what they treat.

Training should be there for TMPs monthly to enable them improve their practice.

TMPs should keep /maintain records of the people they treat and how they treat them.

The participants called on the area chief ,who was present to assist in the conservation of medicinal plants by reducing charcoal burning and unnecessary cutting down of trees. Further, they requested him as the arm of the government present at the meeting to negotiate for them to be allowed to harvest their medicines from the forests instead of being considered as criminals when they try to do so.

The chief on the other hand advised the participating TMPs not to act or behave as witchdoctors but consider the patients as people who need help. He also advised them not to sell drugs very expensively as this discouraged people from seeing their help He concurred with them that they needed form an organization and to be given permits for their work so that they do not have to hide as they practice The area councilor also reiterated these sentiments.

Action Plan

To be developed by GAN

4.0 CONCLUDING REMARKS

This pilot study revealed two major issues. One that there is a need to continue the documentation of ethnomedicinals in this part of the country as there seems to be some new sues to certain known species.

Regarding the conservation of medicinal plants, a shift by a large section of the community to formal healthcare system is impacting negatively on the traditional systems of preserving indigenous knowledge. We are therefore loosing information which might be very useful in the conservation and propagation of the ethnomedicinal resources and something should be done salvage this situation.

The community in Rachuonyo is eager to participate in the documentation of ethnomedicinals resources and as revealed during the workshop they also have a clear idea of the kind of assistance they require in order to improve TMP and the management of medicinal plants.

The situation in Rachuonyo district reflects what may be the general position in other areas in Kenya. Considering the current world trends and interest in natural medicine, their conservation and sustainable utilization, it is imperative that a lot more resources be committed to gather knowledge on the ethnomedicinals and their uses, efficacy, harvesting, sustainable utilization and conservation.

IV. APPENDICES.

APPENDIX 1. Workshop Agenda.

DAY 1 12-6-99	
FROM 2.00 PM Onwards	Arrival of participants.
3. 30 -4. 00	Afternoon tea with cakes.
4.00- 6.00	Visit New GAN Herbal Garden, 1 Km from Bongu Bus stop on the way to Agawo Primary School
7. 30 PM	Dinner.
8.45 PM	**Video (Ayurveda: The Traditional Medicine of India, in Expedition search of medicinal plants: by Dr Narayan**
DAY 2 13-6-99	
9.00 -9. 50 am	**INTRODUCTIONS** (self)
9. 50 -10 . 05am	Opening Address & Welcome Speech.
10. 05 - 10. 20 am	Objectives of the workshop. OBJECTIVES. • Address barriers and mistrust between traditional healers and the medical Doctors. • Acceptability in the use of proven medicinal plants especiallty those used for common ailments. • What scientists and Doctors can contribute in improving the Traditional healers practice. • Conservation of medicinal plants.
10. 20 - 10. 50 am	**TEA/ COFFEE BREAK.**
10. 50 - 11. 00 am	Introduction to working groups.
11. 00 am - 1. 00 pm	Working groups sessions: The participants view on medicinal plants use and conservation and utilization. The use of traditional knowledge.
1. 00 - 2. 00 pm	**LUNCH**
2. 00- 2. 30 pm	Play on the importance of medicinal plants.
2. 30 - 4. 00 pm	Report from Working groups.
4. 00 - 4. 30 pm	TEA / COFFEEA BREAK.
4. 30 -5. 30 pm	Chief and counselor speech. General observations from participants.
5. 30pm	VOTE OF THANKS
DAY 3 14 - 6 - 99	
8 . 00 AM	Breakfast Guests leave at their pleasure

APPENDIX 1I WORSHIP PERTICIPANTS LIST

NAME	NAME CONT'D
1.Isaya Sundays. De'willis*.	38. Bernard Okello*.
2.Flora. Odek*.	39. Samuel. Onyango.
3.Dorka.Rabah*.	40. Griffin. Opiyo
4.Siprosa.Munde.	41. Russel. Nyumba*.
5.Isdora.Awino*.-	42. Meryl. Aoko.
6.Janipher.Auma*.	43. Jared. Otieno.
7.George.Owino*.	44. Wilson. Opiyo.
8.Kristina. Odongo*.	45. Leonard.Oselle*
9.Mary.Atieno*.	46. Bernard. Odhiambo.
10.Michael. Ogutu*.	47. Florence.Achieng.
11.Caren. Migowi*.	48. Hellen.Adero*.
12.Margaret.Ogweno.	49. Ronica.Yonga*.
13.Consolata.Ondigo.	50. Peres.Akumu*.
14.Penina. Amadi.	51. Wilfred. Ajwang*.
15.Dorca. Simba.	52. Jenifa. Abeka*.
16.Salina Raba.	53. Wilfrida. Pete*.
17.Emily. Onger.	54. Melania. Ojwang.
18.Jane. Okumu.	55. Mary. Nunda.
19.Plista Adoyo.	56. Bernard. Opiyo.
20. Pamela. Akinyi.	57. Zachary.Onunga.
21.Charles. Mwalo.	58. Philemon.Aroko.
22.Eveline. Ochieng.	59. Philip. Oyucho.
23. Justina. Aloo.	60. Paul. Juma.
24.William. Oyucho.	61. Erick. Ojwang.
25.Mary. Oyucho.	62. Charles. Oguta.
26.Nelson Odek.	63. Edward.Oyucho.
27.Preskila. Oyucho.	64. Samwel. Okoth.
28.Walter Achieng.	65. Joseph. Okingo.
29.Silas. Yogo.	66. Nashon. Aroko.
30.Prisca. Wakenga.	67. Miriam. Abuto
31.Fileria. Ogada.	68. Pamela Akinyi Onguny
32.Esther. Anyango.	69. Sarah Awiti
33.Patricia. Oyucho.	70. Consolata Adhiambo
34.Mary Atieno.	71. Wilfrida Pete Muga
35.Sen. Chief Cornel K'Aol.	72. Russell O. Nyumba
36. Jerusha AluochNyandere	73. Mellenia Ojwang'
37. Okumu*	74. George Ogot

1. *Project Report: Ethnomedicine and Medicinal Plants conservation in Rachuonyo District*

75. Samuel Ogoto
76. Okello Bernard
77. Caroline Oliech
78. Micodemus Onger
79. Grace Adhiambo Olando
80. Summit Oketch
81. Harrison Ogweno
82. Phillip Oyucho
83. Agnes Aoko
84. Beatrice Oketch
85. Regina Ochieng
86. Simon Mathenge
87. Mary Ong'ow
88. Irene Atieno
89. Nelson Okumb
90. Ibrahim Ahmed

* Indicates the traditional medicine practitioners interviewed during the pilot survey.

APPENDIX 1II

Luo Plant name	**Scientific name/family**	**Use**	**Others**
1. Achogo, Poko Lango	*Clematis hirsuta* *syn Clematis brachiata* Raunclacea	Decoction of roots and leaves prepared approx 200g in 1L. of H_20 two tablespoons taken twice daily for - malaria - measles Angiew Upto one glass is safer for adults	L= treatment of Gonorrhoea, sorethroat, infusion from roots for yaws R= remedy for malaria. Flowers used to clear nose. Pounded fresh roots have a pungent smell and elephants are believed to clear nose using this. Also decoction of roots, & leaves used for smelling on the body. (K-1[5])
2. Ogaka, Okaka	Aloe sp. *Aloe lateritia* Aloecea (formerly Liliaceae	A decoction of the leaves use 2 tablespoons daily for children, a cup for adults. Overdose can cause severe diarrhoea and even death.	Roots and stem are made into a decoction and drunk as a carthatic laxative and for treatment of other gastro intestinal problems. (K-2[6]). several other uses in other communities in Kenya (K-1[5])
3. Nyalwet Kwach	*Toddalia asiatica* (L) Lam link	Leave, roots and bark can be used. The decoction is drunk; 2 tablespoons 2 times daily, for - malaria, fever, toothache and stomachache.	Infusion of roots. Used for coughs, (K-1[5])Roots chewed or as a decoction or infusion for stomachache (K-2[6])
4. Ochol	*Euclea divinorum.*	Boil 2 to 3 roots in 500ml H_20 and take 50ml daily for	(K-1[5]) - A concoctions of roots of *E.divinorum and C megalocarpus*

[5] Kokwaro, J.O. Medicinal Plants of East Africa, op cit.

[6] Kokwaro, J.O. and Tomothy, J. Luo Biological Biological Dictionary. East African Educational Publisherss, Nairobi, 1998.

	Subsp. Keniensis (Ebenaceae)	1 weeks to treat stomachache and as a laxative for 2-3 days. As a concoction together with roots of *Rhus vulgaris* and leaves of Cessia didynobohya used to treat malaria	taken for chest pain pneumonia, internal body swelling called kati by the Akamba people - worm medicine - during initiation ceremonies rituals of purifications by Sebei tribe in Kenya - root and bark used in soup as a tonic
5. Obino	*Senna didymobotrya* *Cassia didymobotrya* *Leguminosae* Sub. Fam. caesalpinioideae	A decoction of leaves or roots used to treat malaria as well as constipation. Two tablespoons taken once daily. An overdose can be fatal causing violent vomiting and death	(K-1[5]) - used for veterinary purposes leaf decoction of leaves used as a purgative, for ringworms, malaria, fever backache, & diarrhoea. (K-2[6]) used as a protective charm to drive away evil spirits and for stomachache.
6. Abuor, Rabuar	*Gutenbergia cordifolia (Erlangia cardifolia)* (Asteraceae or Compositae)	A decoction of the leaves used for malaria and fever as well as for constipation. Two tablespoons taken daily. (used like Obino)	(K-2[6]) - Infusion or decoction of crushed leaves given to children for treatment of stomachache particularly caused by sorcery ("Sihoho). Acts as emetic and remove Juok from the body.
7. Odunyno	*Conyza floribunda* (Compositae)	Used exactly like a Obino. For malaria, also used together with "Olando" (*Indigofera erecta*) and "Abunga seka to treat ringworms and other skin fungal infections. The dried leaves mixed with ghee and applied on the skin.	(K-1[5]) - Infusion of leaves given to babies as laxative, whole plant used to treat pimples (small pox, chicken pox). Poultice of leaves for swelling on face - pimples.
8. Wanyama	*Crassocephalum sp.* *Solanecio angulatus*? (Identity not clear)	A decoction of the whole plant used to treat malaria	

9. Wuya ndawa (wuandawa)	*Withamnia somnifera* (Sterculaceae)	For treatment of unnatural body swelling and pain in the body. For treating yamo a decoction of powdered roots taken also for treatment of malaria, and fever. In addition the roots can be boiled and steam inhaled to effect treatment. Treatment of patients near death i.e very sick.	(K-1[5]) Sap from fresh roots used to treat stomachache, ulcers. Root decoction used for - skin rash, excessbile labour pains and general ill health. Dried powdered root material take in tea; a teaspoonful, with honey for a above ailments. Heated leaves applied as pain killer, root decoction for Gonorrhoea
10. Yiena akrusi	*Rhynchosia elegaris* (Leguminosae Sub. Fam Papilionoideae.	For fever, constipation, meningitis, used when patient is near death, very sick. For cerebral malaria, powdered dried root or an infusion is made and the patient inhales the vapour , drinks or is given as an injection.	(K-2[6])- Root tuber used to treat mental illness
11. Landra	*Cissampelos Mucronata* (Menispermacae)	Very important medicinally! For treatment of fever and malaria the whole plant is washed, crushed while fresh and used to prepare an infusion. 50mls of this is taken x2 daily for treatment.	(K-2[6]) Juice from roots taken for stomachache (K-1[5]) - Used to treat swollen testicles in baby, for abdominal pain and as antidote to snake bite. Veterinary use: - leaves + leaves of *V.amygdalina* used to facilitate removal of placenta in cows.
12. Nyang'ony akuodi (Nyawang akuodi)	*Vernonia lasciopus* (Asteracae or compositae)	Pounded leaves used to make an infusion which is taken for malaria and fever. 50mlx2 daily for a week. Also for gonorrhoea and as a sexual stimulant for men	(K-1[5]) - Leaves or roots used to treat stomachache. Roots are said to be more effective. Root used as sexual stimulant for men. Leaves also for abdominal pain, indigestion, purgative. For veterinary use to treat sores in cattle.
13. Okwero	*Clerodendrum myricoides* (Verbenaceae)	For fever/chest pains, and malaria. Root or leaves decoction made with either fresh or dry powdered material and given 100ml daily for 1 week.	K-1[5]- Roots used for treatment of chest pains, indigestion, malaria, sore throat, tonsillitis, malaria, rheumatism & as purgative, emetic & to treat gonorrhoea.

14. Minya	*Cissus Rotundifolia* (Vitaceae)	For diarrhoea and fever . Roots (tuber) and leaves are pounded and used to prepare an infusion or dried material used to prepare extracts taken 100ml twice daily for 1 week for fever and diarrhoea.	Roots used as spices (K-2[6])- Infusion of whole plant used to treat chickens and leaf juice for skin infections. Leaves for inflammation and swelling on skin. (K-1[5]) stem fibres used to stop bleed by Digo tribe in Kenya. Plant used to treat - colds, swellings.
15. Kinga Kinga (makinga)	*Ocumum suave*	For fever and diarrhoea in children Oriya nyacha . The upper part of whole plant boiled and 100ml taken x3 daily for 5 days. Sometimes a decoction made with other herbs used.	(K-1[5]) Leaves as treatment of blocked nostrils. Also decoction of leaves for abdominal pains, sore eyes, ear trouble, coughs and a disinfectant and insecticide.
16. Nyabung odidi	*Mycroglosa pyrifolia*	For sore throat, headache, gynaecological problem, miscarriage. Fresh leaves soaked in water (warm H_20 used). For headache - root sap used a drop in the nose.	
17. Sangla	*Rhus vulgaris* (Anacardiaceae)	For amoebiasis, fever and stomach ache. Roots of this plant, together with roots of venornmia *auriculifera* and *Euclea divinorum*, boiled (fresh or dried) and taken three times daily.	A decoction with roots from other plants used for expectant mothers to ease delivery. Also for gastro-intestinal problems. Roots +*Carissa edulis* roots used for yamo swellings. Stem used as tooth brush
18. Ochuoga	*Carissa edulis* (Apocynaceae)	For diarrhoea and fever; a decoction made from roots of this plant & of *Todalia asiatica* Euclea *divinorum* and *Rhus vulgaris* taken 100mlx3 daily	(K-2[6]) In concoction with other plants used for stomachache - yamo swellings (cancer) - venereal diseases -gynaecological problems

19. Obuya Kenge	*Hypoestis*	For yamo, unexplained body swelling especially on hands and legs, below the ear. Together with yiend arusi and Rachar (*Senecio stulmanii*), dried root powdered and decoctions of these plants taken, 1 glass 100ml x3 daily for 5 days.	
20. Agwa	*Rubia cordifolia*	Whole plant together with the roots of Riaga boiled and concoction taken for treating Leprosy, Nyinyo, also to ease child birth Agwa+Atilia (*Psiadia punctulata*) roots pulverized and mixed with ghee applied for on leprosy, patches. The whole plant (Agwa) burnt and the ash used to treat oral thrush	(K-1[5]) boiled root decoction drink 3 times a day for slow healing of stomach ailments. Leaves and stems used for treatment of diarrhoea the whole plant mixed with *Galium spurium* used to treat mouth sores.
21. Atili, Atilili	Psiadia arabica (Asteraceae/Compositae	As above	(K-2[6]) Juice from roots used for the treatment of coughs and sore throat - root decoction - drunk as an aphrodisiac and for treatment of vertigo. Leaf decoction for malaria. To treat sterility root decoction mixed with that of *Crassocephallum manii*, *Euphorbia tirucali* and the uncoction drinks.
22. Apoyo	*Carica papaya* (Cariacaceae)	Root roasted and given to pregnant mothers to chew to aid in easing child birth. - It was mentioned that placenta from cats was also used for this purpose! - particularly to easen removal of placenta	(K-2[6]) Fruit

23. Atipa	*Asystasia mysorensis*	*A. myserisis, & Centella* asiaticia used to treat miscarriage. Powdered leaves steeped in cold water and drunk 50ml x3 a day. Also used to treat emaciation.	(K-2[6]) - Sometimes used as a vegetable. Used in concoction to treat malaria.
26.Rayudhi	*Gardenia lutea* (Rubiaceae)	Planted in the home ground to prevent the home from being struck by thunder. - leaves used to treat cataracts (chiero/tigo) when just beginning.	(K-2[6]) roots used in concoctions and administered into nostrils for treatment of mental illness. Branches placed on roof of home as a protection against lightening.
28.Abunga i seke	*Fuerstia africana* (Labiatae or Lamiaceae)	Used to treat pimples and malaria. The leaves are rubbed in the hands/ and applied on the face to treat pimples. - Also boiled and steam included to (steaming) to treat cough and *Note*: leaves when pounded and rubbed on hands turn orange/brown for malaria leaf decoction used.	(K-1[5]) Young leaves and young part of plant pounded and used for stomach ulcers and tongue infections. - make sterile women fertile - remedy for malaria, anthelmintic - juice used to relive ophthalmia
29. Get	*Aspilia pluriset* (Asteraceae/Compositae)	Used to treat miscarriage and oriya nyacha - diarrhoea common in children. The leaves are boiled and the decoction taken 100ml x3 days for 4 days to treat either	(K-2[6]) leaves used to treat stomachache. (K-1[5]) Pounded leaves applied to treat skin diseases. Leave rough like sand paper used to cut the eye lashes in trachoma patients. Once cut there is bleeding which is stopped with with *Ximenia caffra* also used to treat conjuctivities
30. Atipa	*Justicia betonica* (Acanthecea)	Atipa + makinga matindo boiled and taken x3 to treat stomachache and malaria in children.	

31. Ombasa	*Tylosema fassoglensis* Leguminosae subject Caesalpsionidea	Root tuber used to prepare tea drunk to treat stomachache and the other stomach ailments, 100ml x3 daily. Also SDAS use it to make tea because the dried root material becomes dark brown on fermenting and drying.	(K-2^6) root decoction used to treat diabetes, obesity, constipation and other gastrointestinal problems. (K-1^5) to treat diarrhoea.
32. Kagna (Anagan)	*Phyllarithes guineensis* (Euphorbiaceae)	Used to treat malaria and to protect the home. from evil spirits. i.e. the twigs hanged on the wall for this purpose.	(K-2^6, K-1^5) Use as a *fumigant* to treat corneal ulcer. (Boiled and the steam applied). To treat decoction also drunk for the same purpose.
33. RayweYwech Nyalumbdhok	*Sporobolus filipes* (Graminae or Poaceae)	The root is roasted and chewed to treat sore throat	-
34. Bwombwe	*Cyphostema orondo* (Vitaceae)	The root cooked to be well done (for about 2hrs) and sieved. The decoction drunk to cure diarrhoea in children oriya nyacha and for *marasmus.*	(K-2^6). Whole plant together with leaves of *Sida cuneifolia* pounded and applied to boils and abscess to treat. Decoction used for gynaecological problems. Leaves applied to treat polio and for dermatological problems. (K-1^5) as above and green fruits and root decoction used as tonic in children.
35. Ober	*Albizia coriarcia* (leguminosae sub.	For treatment of Malaria, oruyanyacha, diarrhoea common in children. To be used with care as it is	Roots used for menorrhagia, whooping cough, infertility, post-partum haemorrhage.

	Fan mimosoideae)	believed to be poisonous at high doses. Leaves used for catching fish.	Unexplained swelling yamo cancer? and stomach problems. Skin problem mbana Stem used as chewing stick. (K-1[5]) as above + treatment of VD and sore eyes - (bark)
36. Orembe	*Erythrina abyssinica Leguminose Sub. Fam.* papillionoideae.	Bark used to treat Oriyanyacha. Concoction made of roots, stem + leaves used. Dosage not clear.	(K-2[6]) Pounded parts used to treat yamo and as source of wood for items such as beehives, mortars.
37. Olando	*Indigofera arrecta* (Legumunisae Sub Fam Papilionoideae)	(See Jerusa)	(K-2[6]) In Siaya infusion used for sore throat and coughs & for stomach problems (K-1[5]) Oily extraction of leaves for massaging dislocated joints. Roots chewed; roots+roots of *Croton polytrichus* and *withania Somnifera* powder drunk in porridge to alleviate labour pains.
38.Nyabung Odidi	*Microglossa Pyrifolia* (Asteraceae/compositae	infusion and lead for malaria, is fever. ("del maore"). Decoction of leaves taken to ease Pregnancy, believed to keep the mother healthy & to ease child birth. Also taken for sore throat and cough	K-1 Leaves used to treat malaria, is emetic for headache & colds. (K-2[6]) root decoction used in pregnancy to ease child birth. Root also used for colds, stomachache, as steam bath for yamo. Infusion of roots given through nostril to treat mental illness.
39. Ngo'w (Ng'owo)	*Ficus species* (actual species not identified)	Concoction of this with "orembe" bark used to treat diarrhoea in children i.e "Oriya nyacha"	(K-2[6]) used to treat dysentery, VD.
40. Kuogo	*Lannea schweinfurthii*	Important Medicinal plant. Used to treat malaria & sorethroat as well as "Oriya nyacha"	(K-2[6]) Decoction from any part for severe headache, for dermatological problem, VD, and "Yamo" plus gynaecological

	var. stuhlmanii (Anarcadiauae)		problems. Also for coughs, dysentery, & other stomach problems.
41. Pedo.	*Harrisona abyssinica* (Simorobaceae	For treating several children diseases. A concoction is made of roots of *Harrisonia abyssinica* + *carica papaya* root plus of *Mangifera indica* roots.	
42. Opok pok	*Parinari curaterifolia* *Parinari exelsa* (Rocaceae		
43. Mafua	*Catharanthus roseus* (with pink flower)	The whole plant is boiled and the decoction taken twice to cure stomach diseases, particularly claimed to cure cholera, also for malaria.	-
44. Mafua	*Tithonia aethiopica*	Treatment of malaria. Leaf decoction used or infusion. Leaned powdered and water(cold) added. The is juice drunk.	-
45. Milusia	*Vernonia auriculifera* (Asteracese corrpositae)	Leaves decoction used to treat malaria and fever.	-
46. Seje	*Dicliptera Laxata* (Acanthaceae)	Use to treat malaria, a bewitched person chira-emaciation,	

		The whole upper part is pounded& allowed to dry in the sun upon which it turns black. To prepare medicine, a handful is soaked in 100ml of water & drunk daily. The decoction also used to massage the joints, as haematinic. No toxicity, no problem with overdose. Could also be mixed with "Jok".	
47. Mwarubaine	-	Any part used leaves, roots, bark. Decoction drunk for treatment of malaria dosage 100ml (made of 1 tablespoon powder in water) x2 daily males taken for 4 days and female for 3 days. For typhoid infusion of fresh leaves + pulverised roots used to wash patients. Drug also mixed with mixed elephant dung & used to bathe and drunk x3 daily	
48. Dwele	*Melia azediracta*	Fresh leaves boiled in water used to bathe patient & give 100ml x2 daily also steam for measles.	-
49. Jok	(*Jatropa curcas*) (Euphorbiaceae)	For strong malaria, swelling limbs, pain in bones. For malaria could be mixed with D. laxata upper part.	-
50. Aru Piny	*Commiphora africana* (Burseraceae)	dried pulverised bark mixed with root of "Oyuso" & 2 teaspoons added to 150ml of porridge (made from sorghum/millet). This is taken only once for bloody diarrhoea. Dose should not be exceeded as would lead to severe	(K-2[6]) Bark used to treat cough; roots for gynaecological problems. Roots added to various concoctions for the treatment of gastro-intestinal problems.

		constipation.	
51. Oyuso	*Hydnora abyssinica* (Hydnoraceae)	Root used together with bark of C. *africana* to treat bloody diarrhoea.	(K-2[6]) Root eaten, as infusion or powdered root for diarrhoea & removing placenta
52. Obuya; (Obuya- kenge)	*Gladiolus psittalinus* *(Iridaceae)??* (confirm from Mathenge)	Root used for treating mental illness or strong malaria leading to mental disturbances . Powdered dried root used. A pinch in the nose "Ifito ng'ato" leads to sneezing to be used with utmost care especially in children. Overdose can kill or make one mad.	-
53. Akech	*Justicia?*	Aerial part pounded, soaked in water and infusion drunk for severe stomachache. Causes severe vomiting and so it is believed to remove any bad food which the patient had eaten. Normally used also in cases where patients is said to have been bewitched while eating.	
54. Roko	*Zanthoxylum usambarense* (Rutaceae)	Seeds used: powdered and added to tea or porridge to treat "Yamo" swellings "cancer"?? general malaise, and malaria. The medicine dose is 1 tablespoon x2 daily for 2 days. Can also be taken in tea for general good health.	
55. Sogo Maitha	*Zanthoxylum gilletti*	For distended stomach after eating or due to allergic reactions following a meal leading to swollen	(K-2[6]) decoction or concoction of bark drunk for constipation, snake bite, & rheumatism.

	(Rutaceae)	body. Dried pulverised bark used. 1 table spoon in water or any drink. For amoeba dried pulverised bark mixed with "Aru piny" "arubaine", "roko", "akech" and "oyuso". taken 100ml x2 daily for 2 days only. Patient not to drink milk or eat milk products.	
56. Get	-	Fresh or dry powdered is used. 1 table spoon in a glass of water x3 (4) for female (male) for 2 days to treat one who has been struck by lightening. (how refused to explain, said it was his trade)!	
57. Ombasa	*Tylossema fassoglensis* (Legiuminosae Sub Fam. Caesalpinodeae)	Seeds eaten Dried tuber turns dark brown and is used to prepare tea. drunk a tonic to treat gastro- intestinal disorders e.g stomachache, bad stomachache.	(K-2[6]) Root decoction used to treat diabetes and obesity or for constipation.
58. Minya cf (15)	-do-	Used for general malaise, and fever and stomach disturbance.	-do-
59. Orembe cf	-do-	Bark decoction used for bloody diarrhoea in children also claimed to cure TB, typhoid & amoebiasis.	-do-
60. Awayo/Jajuok olaw	*Spilanthes mauritania* (Asteraceae or Compositae)	The whole plant is burnt to ashes and the ash used for treatment. This is licked x2 daily to treat gynaecological problems, especially lower abdominal pains. flower chewed for toothache.	(K-2[6]) Crushed plant applied to broken limbs, leaves & flowers, chewed for toothache.

61. Nonyo /yadh pacho	*Centela asiatica*	The leaves are chewed and juice swallowed to treat " chira" a disease which is believed to result from over stepping certain taboos and which leads to severe emaciation/slimming. The whole plant could also be pounded& soaked in water. This is used to bathe patients daily for 1 week & also drunk 100ml x2 daily. The "chira" disease presents like AIDS.	Infusion of plant drunk or uses as a bath to treat chira.
62. Ober	*Albizia coriaria* (Leguminosae Sub Fam. Mimosoideae)	The leaves mixed with bark of "ngow" is pounded & used to prepare a decoction used to bathe a child suffering from skin problem, fungal infections and having "Oriya nyacha" diarrhoea.	(K-2[6]) many uses
63. Atipa	*Asystia mysorensis* (Acanthairae)	The aerial part is pounded and used to prepare an infusion given to children to relieve constipation & for malaria. It is extremely bitter	(K-2[6]) Sometimes as a vegetable & for treatment of malaria.
64. Yeind Arusi (Yiend akrusi)	*Rynchosia elegans* (Lepuminorae Sub Fam. Papilionoideae)	For treatment of fine mental illness. Used with "Obuya kenge". Dried roots of ground to powder and used to "fito" the patient. Pinch of powdered introduced in the nose& causes severe sneezing. Use once only, repeat after 2-3 days if condition persists. Can also be used fresh. (Introduce sap into nosestril) Overdose can kill. CAUTION.	K-3 Infusion of root tuber or ground root introduced into nostril to treat mental illness.
65. Oluo chiel "Rathira"	*Hyptis pectinata*	Pounded leaves used to prepare a decoction taken for	(K-2[6]) used to treat skins infections in children as gastrointestinal

	(Labiatae or Lamiaceae)	abdominal pain in women "sejra" or "sigete" for general malaise and for treating children born with skin diseases.	problems.
66. "Quinine Nyaluo"	-	Infusion used for malaria.	-
67. Pelele (Nyar Kisumu)		For treating stomach ailments "yamo" and malaria. Whole plants (2-3) pounded & used to prepare an infusion which is drunk 100ml x3 to treat malaria for 3 days.	-
68. Ogundu (Amoyo)	*Sida cuneifolia* (Malvaceae)	Roots or whole plant (if small) pounded & placed on a wound. It can also be chewed & used the same way. The juice can also be swallowed to treat mouth ulcers &sorethroat.	(K-2[6]) Root chewed & juice swallowed to treat sore throat.
69. Landra	*Cissampelos mucronata.* (menispermaceae)	For stomachache ache An infusion made from roots is drunk	(K-2[6]) juice from roots used as medicine for abdominal pain.
70. 70. Dek. (Akeyo)	*Gynandropsis gynandra* (Capparacea)	The leaves are eaten as vegetables. Used for treating Ear-nose and throat infections. The aerial part is pounded and the juice (2 drops) is placed in eyes, ear or swirled around the mouth & swallowed for throat infections.	(K-2[6]) used as vegetables; to treat conjunctivitis and severe thread worm & stomach problems.